

DART BOARD CABINET HAVING TOE LINE GENERATOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a dart board cabinet, and more particularly to a dart board cabinet having a device for generating reference lines or toe lines and for avoiding the users from drafting the reference lines or the toe lines manually.

2. Description of the Prior Art

Various kinds of typical dart board cabinets have been developed and comprise a dart board including a number of darts areas or dart segments to be hit by darts. In addition, various kinds of dart games have been developed for being played by one or more players. For example, U.S. Patent No. 4,881,744 to Hansen, U.S. Patent No. 5,211,405 to Shelton et al., and U.S. Patent No. 5,292,135 to Menke disclose three of the typical dart board cabinets.

For almost all of the dart games or dart boards or dart board cabinets, one or more reference lines or toe lines are required to be drafted in front of the dart boards or the dart board cabinets, and the players should stand behind the reference lines or the toe lines to play the dart games.

The distance between the reference line or the toe line and the dart boards or the dart board cabinets is normally ranged from about seven (7) to nine (9) feet. For example, the distance between the toe line and the dart boards or the dart board cabinets is about seven (7) feet and six (6) inches in Great British, and is about seven (7) feet and nine and a quarter (9 and 1/4) inches in the United States.

However, till today, the toe lines are still drafted in front of the

dart boards or the dart board cabinets by the players manually, with such as chalk, pen, or the like. Before playing the dart games, the players may have to measure the distance between the toe line and the dart boards, and then may have to draft the toe lines. The toe lines drafted by chalk, pen, or the like normally may not be last for long time.

The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional dart boards.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide a dart board cabinet including a device for generating reference lines or toe lines and for avoiding the users from drafting the reference lines or the toe lines manually.

In accordance with one aspect of the invention, there is provided a dart board cabinet comprising a dart board attached to a cabinet body, and one or more reference line generating devices attached to the cabinet body, to generate at least one toe line for the dart board, and to avoid the users or the players from drafting the toe lines manually, and from drafting the toe lines every time when the players are going to play the dart games.

The reference line generating device includes a laser or light generating device for generating the toe line, and/or includes a housing to receive the light generating device, and/or includes a circuit board received in the housing, and the light generating device is attached to the circuit board.

The housing includes a casing having a bore formed therein to receive the light generating device. The reference line generating

device includes a lens received in the casing and disposed in front of the light generating device. The casing includes a passage formed therein and communicating with the bore thereof to receive the lens therein.

5 An attaching device may further be provided for attaching the reference line generating device to the cabinet body. The attaching device includes at least one arm having a first end attached to the cabinet body, and a second end for supporting the reference line
10 generating device. The arm includes an extension laterally extended from the first end of the arm, and secured to the cabinet body with at least one fastener.

 Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the
15 accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

 FIG. 1 is a perspective view of a dart board cabinet having a reference line generating device in accordance with the present invention;

20 FIG. 2 is a side view of the dart board cabinet;

 FIG. 3 is a perspective view of the reference line generating device of the dart board cabinet;

 FIG. 4 is an exploded view of the reference line generating device of the dart board cabinet;

25 FIG. 5 is a side schematic view of the reference line generating device of the dart board cabinet; and

 FIG. 6 is a side schematic view similar to FIG. 5, illustrating

the operation of the reference line generating device of the dart board cabinet.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, and initially to FIGS. 1 and 2, a dart board cabinet 1 in accordance with the present invention comprises a cabinet body 1, a dart board 10 attached to the cabinet body 1 and including a spider 11 to separate the front portion of the dart board 10 into a number of dart areas or dart segments 12 that are to be hit by darts (not shown). The dart board 10 may include a control panel 14 to control the dart games to be played by the players, for example.

The dart board cabinet body 1 further includes one or more reference line generating devices 30 attached thereto with a coupling or attaching means or device 20, and preferably disposed or arranged below the dart board 10. For example, as shown in FIGS. 3-5, the attaching device 20 includes one or more arms 21 each having an extension 22 bent or extended laterally from one end thereof, and one or more orifices 23 formed in the arms 21 or extensions 22, for receiving fasteners 24 which may secure the arms 21 to the dart board cabinet 1.

The attaching device 20 further includes one or more apertures 25 formed in the other end of the arms 21, for receiving fasteners 26 which may be used to secure the reference line generating device 30 to the arms 21. For example, the reference line generating device 30 may include a housing 31 rotatably secured to the arms 21 with the fasteners 26, to allow the housing 31 of the reference line generating device 30 to be rotated and adjusted relative to the dart

board 10 and the dart board cabinet 1 to any selected angular positions, best shown in FIGS. 5 and 6.

The housing 31 of the reference line generating device 30 includes a chamber 32 formed therein for receiving a circuit board 40 or the like therein, and includes a casing 33 provided or extended in front portion thereof. The casing 33 includes a bore 34 formed therein, and a passage 35 formed therein and intersecting or communicating with the bore 34 thereof for receiving a lens 36 therein.

The circuit board 40 includes a laser or light generating device 41 provided or attached thereon, and engageable into the bore 34 of the casing 33, and disposed behind the lens 36, for generating light through the lens 36, in order to generate one or more reference lines or toe lines 70 (FIG. 1) on the ground or the like. It is to be noted that the circuit board 40 and the light generating device 41 may be solidly secured to the dart board cabinet 1 at the selected angular positions by solidly securing the housing 31 to the dart board cabinet 1.

The circuit board 40 may further include a lens or a hood 42 attached thereto, and disposed or secured in front of the light generating device 41, for such as light concentrating purposes. The light generating device 41 may also be arranged to generate the reference lines or the toe lines 70 without the lens 36 nor the hood 42. In addition, the reference lines or the toe lines 70 may include a predetermined length or unlimited length.

It is further to be noted that the reference lines or the toe lines 70 may be generated by the light generating device 41 and spaced

from the dart board 10 at the selected distance when the housing 31
and the circuit board 40 and the light generating device 41 are
solidly secured to the dart board cabinet 1 at the selected angular
position, such that the players are not required to redraft the toe
5 lines again and again when playing the dart games.

A cover 37 may be secured to the rear or back portion of the
housing 31, with such as fasteners 38, in order to stably retain the
circuit board 40 within the housing 31. The circuit board 40 and/or
the light generating device 41 may be coupled to various electric
10 power suppliers, such as the electric power supplier of the dart
board 10, with such as electric wires 43, in order to be energized by
various electric power suppliers.

The dart board cabinet may include one or more reference line
generating devices 30 attached thereto, and may be sold without the
15 dart boards 10 attached thereto. However, the dart board cabinet
may include one or more areas or portions for supporting or for
attaching the dart boards 10 thereto.

Accordingly, the dart board cabinet in accordance with the
present invention includes a device for generating reference lines or
20 toe lines and for avoiding the users or the players from drafting the
reference lines or the toe lines manually.

Although this invention has been described with a certain
degree of particularity, it is to be understood that the present
disclosure has been made by way of example only and that
25 numerous changes in the detailed construction and the combination
and arrangement of parts may be resorted to without departing from
the spirit and scope of the invention as hereinafter claimed.